Claims:

1. A system for testing a display having a test generator arranged to display a series of test patterns, each at a different luminance or colour, and with a predetermined minimum difference of luminance or colour from their background, each pattern being unpredictable to a user, and having a test evaluator arranged to determine and record if the user has correctly identified each of the patterns, wherein the test generator is arranged to display alongside each displayed test pattern a selection of candidate patterns for the user to choose a matching pattern.

2. The system of claim 1, the test generator being arranged to display an array of more than one of the test patterns at a time.

3. The system of any of claims 1 to 2, arranged to set the minimum difference.

4. The system of any preceding claim, arranged to send a result of the testing, and an identifier of the display being tested, to a remote database.

5. The system of claim 4, arranged to retrieve calibration data from the remote database for a display of a same type as the display for which the result of the testing have been stored previously.

6. The system of any preceding claim, arranged to select different levels of background luminance or colour to test, the selection being spread across the range of the display.

7. The system of claim 6, arranged to choose a different selection for subsequent tests, to test all levels after a given number of tests.

8. The system of any preceding claim, having a calibrator for altering circuitry used to derive the driving levels of the display.

9. A system for determining an output luminance level displayed by a display for a given luminance drive signal, having a detector for detecting a minimal difference of

drive signal to give a just noticeable output luminance difference at a given high luminance drive level, and a processing arrangement arranged to determine an absolute luminance of the given high input luminance level from the minimal difference and from a predetermined human characteristic of visibility threshold of luminance changes at different luminance levels.

10. The system of claim 9, the processing arrangement being further arranged to determine a change in output luminance corresponding to the minimal difference of drive signal, and to use the change in output to determine the absolute level, using the human characteristic.

11. The system of any of claims 9 or 10, the processing arrangement being arranged to use a known transfer function of the display to determine the change in output from the detected minimal difference.

12. The system of any of claims 9 to 11, furthermore comprising means for spatially or temporally dithering the drive signal to the display.

13. The system of any of claims 9 to 12, the given high input luminance level being white.

14. The system of any of claims 9 to 13, the detector being arranged to display an unpredictable pattern, and receive an indication of whether a user can identify the pattern correctly, then repeat this test with reduced difference, until the user cannot correctly identify the pattern.

15. The system of any of claims 9 to 14, the detector being arranged to dim the display to use a point on the human characteristic with more variation in gradient.

16. The system of any of claims 9 to 15, arranged to determine a black output level by detecting a just noticeable difference of luminance at a black luminance input level, and deriving the absolute luminance of the black luminance input level from the just noticeable difference and from the predetermined human characteristic of visibility

threshold of luminance changes at different luminance levels.

17. The system of any of claims 9 to 16, arranged to calibrate the display using the determined absolute white and black luminances to adjust a converter of the display used to convert input pixel values into drive levels.

18. A display incorporating the system of any preceding claim.

19. A method of testing a display having the steps of displaying a series of test patterns, each at a different luminance or colour, and with a predetermined minimum difference of luminance or colour from their background, each pattern being unpredictable to a user, and determining and recording if the user has correctly identified each of the patterns, wherein displaying the series of test patterns includes displaying alongside each displayed test pattern a selection of candidate patterns for the user to choose a matching pattern.

20. A method of calibrating a display having the steps of determining an output luminance level displayed by a display for a given luminance drive signal, by detecting a minimal difference of drive signal to give a just noticeable output luminance difference at a given high luminance drive level, and determining an absolute luminance of the given high input luminance level from the minimal difference and from a predetermined human characteristic of visibility threshold of luminance changes at different luminance levels, and using the determined absolute output luminance to determine a correction for the display.

21. A method according to claim 20, wherein detecting a minimal difference of drive signal to give a just noticeable output luminance comprises spatial dithering or temporal dithering of the luminance drive signal.

22. A method according to any of claims 20 or 21, furthermore comprising visually detecting whether the display system is perceptually linear or not.

23. A method according to claim 22, wherein visually detecting whether the display

system is perceptually linear or not includes driving a first pattern with a first combination of luminance drive signals and a second pattern with a second combination of luminance drive signals, the first combination of luminance drive signals and the second combination of luminance drive signals being different but having a same average drive level, and determining a difference in output luminance of the first and second patterns.

24. A method according to claim 23, wherein the first pattern is a background and the second pattern is a symbol on the background.

25. A method according to any of claims 23 or 24, wherein the first drive level is a plain drive level.

26.- A method according to any of claims 23 to 25, wherein the second drive level is a temporally or spatially dithered drive level.

27. The method of any of claims claim 19 to 26, including the step of marking the display with indicia that the display is suitable for displaying medical images.